



# Strand Brewers Club

## Brew Reviews

[Report from NHC 2001](#)

[Style Series: Oud Bruin](#)

[Beer Tour Britain](#)

[Report from NHC 1998](#)

[Homebrew Express](#)

[Hop Field Tour](#)

[State of the Beer](#)

[From Near the Pole](#)

[Blind Beer Tasting](#)

## Report from NHC 2001

### Style Series: Flanders Oud Bruin and Red Ales

By Jim Wilson

These beers derive their sourness from lactobacilli and acetobacters. Long aging and blending of young and well-aged beer may occur, adding to the smoothness and complexity. Much of the hop character is lost during aging. Red beers are distinctly tart/sour, brown ales less so with more malty/fruity complexity. COMMERCIAL EXAMPLES: RODENBACH (RED ALE), LIEFMAN'S GOUDENBAND (BROWN ALE)

At the end of Friday June 22, Alex Puchner of BJ's talked about Flemish Red Ale and Oud Bruin styles. I didn't know much about either style, but I like Chimay Red so went to the session hoping to learn something. What I got was an opinionated, very entertaining discussion of traditional brewing that has its foot on a banana peel.

Alex started by clarifying that, in his mind, this group of Flemish Sour Browns consists of Rodenbach Grand Cru and all the wannabes. He stated that "RGC is the World's greatest beer", leading me to wonder just where he stood on the subject. "It is consistent, refreshing and very drinkable compared to lambic". Unfortunately, it is produced by a process that can't be replicated simply. He dismisses the red vs brown debate and says these are members of the same beer style. We love it for its complexity and the accountants hate it. Arghhh! Lawyers and bean counters are the bane of my life.

Brewing and first fermentation are normal, if complicated. The real action takes place in the conditioning and aging process. Pale, Vienna, Munich and corn are step mashed and brewed for 90 minutes. Northern Brewer, Target and Brewer's Gold are used in moderation (15 IBU). The wort is cooled and a 20 component yeast complex is pitched and allowed to ferment and condition for 5-8 weeks. The beer is then aged in large (120 to 650 hectolitres) oak tuns for about 2 years before the beer is blended and bottled for sale. The oak is only scraped and cleaned every 20 years and the beasties that live in the wood improve the beer's flavor making it one of the most wine like beers according to many.

RGC may or may not become extinct because of the cost of the process, so Alex has tried his hand at duplicating its profile. His recipe includes 2 row, Munich, CaraMunich, maize and chocolate malt infusion mashed at 67 degrees C and brewed for 2 hours with French oak chips and Goldings hops. After cooling, he pitches with Wyeast 3942, lactobacilli and brettanomyces. The beer is interesting, but after 10 months, has a smokey phenol character he doesn't like so the search goes on.

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# Debatable Brewers' Recipes: Ale for Fish

**(a 15th c. unhopped English ale)**

**(brewed Feb 10th, 1998)**

Documentation by Tofi Kerthjalfadsson, Debatable Brewers' guildmaster; Ale (recipe and entry) by Tofi, Anwen ferch Morgaunt, Ellisif Flakkari, Leif Hjalmsson, and Barak Ben David (called "Red").

## Ale for a dish at a feast (and for drinking)

Ellisif was head cook for the Armorers and Needle-workers Schola, held February 28, A.S. XXXII. She was cooking out of a pair of 15th C. English cookbooks, and one of the dishes she wanted to make was a fish poached in ale.

Now she *could* have used a couple of gallons of cheap beer, but that wouldn't have had quite the right taste. And since all the other members of the guild were involved in the event, we thought that the best, most authentic thing to do was to make ourselves some closer-to-authentic *unhopped* ale.

This ale was started two weeks in advance of the Schola. It was still (slowly) fermenting when half of it was used to cook in; it finally stopped about a week after that. It was racked, and bottled still on March 17th. It will have been in the bottle for all of 5 days when judged.

## Recipe

4 1/2 gallons of a fine all-grain unhopped Ale may be made:

### Ingredients:

- 10 lbs., English Mild malt
- 1 lb., oats (rolled)
- 1 lb., wheat (rolled)
- London liquid ale yeast
- 1/2 oz., Light Oak chips
- Enough water (at least 7 gallons)

Start the yeast a day or so ahead.

In an insulated mash-lauter tun, mix 9 qts. of water at 165 degrees F. with the above 12 lbs of grain. (145 F. after mixing). Add and mix in 2 more qts. of boiling water, to reach 152 F. Let sit for an hour and a half.

Recirculate until clearer, and then start to drain out. While draining, carefully add 4 gal. of boiling water to the top of mash tun. (*A tip: I pour my water onto a foam plate that is floating on the surface in order to avoid disturbing the grain bed.*)

Collect all runnings in a large pot, and boil for an hour. Then cool and put into a fermenter.

At this point, we ended up with about 3 gallons of wort at a specific gravity of 1.088. This would have made fine ale, though a very strong one. But we felt that starting something this strong would not be adequately finished in the two weeks of time we had, so we watered it down to approximately 1.058 by adding another 1.5 gallons of boiled and cooled water.

Boil the oak chips in approx. 1 cup water. When the water is darkened, take off heat and allow to cool. Then add approx. 3 oz. of oak-water to the wort. Be careful not add too much.

Aerate (by rolling fermenter back-and-forth and/or stirring aggressively), Pitch yeast and allow to ferment.

The part that was not used for the feast was racked (siphoned off the lees) after fermentation had finished and the ale had substantially cleared. It was bottled still (*i.e.* without priming sugar) a week later.

## Discussion

### About the Recipe

This recipe is modeled loosely after Markham's strong ale recipe [Markham] (partially excerpted below) and Harrison's recipe:

*Having therefore groond eight bushels of good malt upon our querne, where the toll is saved, she addeth unto it half a bushel of wheat meale, and so much of otes small groond, and so tempereth or mixeth them with the malt, that you cannot easily discern the one from the other...*

[Misc-4]

We were trying to recreate much of the taste of a 15th c. English ale. We know that there were some changes to what was considered a 'beer' and what was considered an 'ale' during this time.

Markham, in *The English Housewife* (1615, 1623), writes:

#### Brewing of strong ale

*Now for the brewing of strong ale, because it is drink of no such long lasting as beer is, therefore you shall brew less quantity at a time thereof, as two bushels of northern measure (which is four bushels or half a quarter in the south) at a brewing, and not above, which will make fourteen gallons of the best ale. Now for the mashing and ordering in the mash vat, it will not differ anything from that of beer; as for hops, although some use not to put in any, yet the best brewers thereof will allow to fourteen gallons of ale a good espen full of hops, and no more;...*

[Markham, p. 207]

After the Hundred Years War, in the 15th c., England gained a large number of Flemish and Dutch immigrants, who brought with them the taste for hops in beer [Smith, p. 25]. During part of this time, 'ale' was legally defined to be a malted beverage without hops; 'beer' having hops. Hence our choice to leave them out for this recipe.

## Materials

### Grains

The most common grain in ale, as in beer, is malted barley. Wheat is also fairly common, often in smaller quantities, as are oats. Malting is a process which both preserves a grain for longer-term storage than is possible in the raw form, and activates enzymes in the grain that help turn starches into sugars. After the grain is harvested, it is moistened and allowed to sprout and grow for a few days, then dried in an oven at low to moderate temperatures, and finally threshed and stored.

Traditionally the sprouting would be carried out on a large floor [Markham, pp. 182-185], often in the attic of the malt house. As the grain sprouts, it generates heat. This must be allowed to escape so that the malting grain does not cook itself. The young plants also require carbon dioxide to continue growing. To facilitate this, the malt is turned (scoop it up, flip it over) at regular intervals. A few British maltsters are still producing floor-malt today, though it is rare and expensive.

Historically, kilning was often carried out in what is essentially a large wood oven or smoker. The malt would be spread out on a false-floor made of hair-cloth, straw mat, or other suitable material, on top of some time of loose material, so to allow the hot exhaust from the kiln's oven to evenly penetrate the grain. Then a wood fire would be built in the oven, and the malt baked for several hours, and occasionally turned to prevent burning [Markham, pp. 186-190].

Modern kilning is quite different. Today the malt is roasted in a drum with a water spray to control temperature, patented by D. Wheeler in 1817 [Harrison].

Normally, to better approximate amber and brown malts, I have roasted some portion of Pale malt in an oven. However, for this ale, we did not go to this extent, but instead opted for using English *Mild* malt rather than Pale. Mild is generally roasted just slightly more by the maltster.

Following the Harrison recipe above, we also used a small amount of plain wheat and oats.

## Yeast

Though there have been some reports of successfully culturing yeast from bottles of beer found in ship-wrecks, none of these cultures have become available to the homebrewer. Failing authentic yeast, we opted for a modern yeast of the type used to make London Porter. Both Digbie and Markham recommend making a yeast starter in order to have a sufficient quantity of yeast to attack the large size batches they are making. Digbie advises [Digbie, pp. 99]:

*... This quantity (of a hogshead) will require better then a quart of the best Ale- barm, which you must put to it thus. Put it to about three quarts of wort, and stir it, to make it work well. When the barm has risen quick scum it off and put to the rest of the wort by degrees. The remaining Liquor (that is the three quarts) will have drawn into it all the heavy dregs of the barm, and you may put it to the Ale of the second running, but not to this. Put the barm you have scummed off (which will be at least a quart) to about two gallons of the wort, and stir it to make that rise and work. Then put two Gallons more to it. Doing thus several times, till all be mingled, which will require a whole day to do. Cover it close, and let it work, till it be at it's height, and begin to fall, which may require ten or twelve hours, or more. Watch this well, least it sink too much, for then it will be dead. Then scum off the thickest part of the barm, and run your Ale into the hogshead, ...*

Markham recommends something similar, though not as complex a technique. He says to combine some of your wort (presumably cool enough) with some barm (yeast), and let these work while the main batch is cooling. Then when the main batch is cool, stir up this starter well and mix it in.

Using a starter is good practice in modern, as well as medieval brewing. Starting with a large quantity of yeast will reduce the effects of wild yeasts and other microorganisms by overwhelming them by sheer number, and eating up all the available sugar.

## Water

England generally had fairly hard water. Fortunately, so does Pittsburgh, so we did not feel that we needed to alter the mineral content of the local water for this brew.

## Oak

Beers and ales were usually tunned in casks, often made of oak. Also, in some of the referenced techniques, some of the processing of hot liquid was done in an oak cask. To simulate some of the oak flavor that may have been picked up, we chose to boil a small amount of oak chips in a bit of water, and then add some of this to the wort. Some care should be taken not to over do this, as the oak can have a surprisingly aggressive taste.

## Techniques

Mashing is the process of converting the starches in the grains into fermentable sugars, using the enzymes in the grain. This is done by holding a mixture of grains and water at a relatively high temperature for a period of time (e.g. 150 F for an hour).

Of course, both the thermometer and hydrometer were invented after 1600. Being somewhat paranoid, however, we used them to control this particular batch.

### Infusion mashing

The infusion technique was the predominate method used by the English. This is a very simple technique: grains are crushed into few pieces (each) to expose the partially modified starch kernels. Then these are mixed with hot water to the consistency of medium-thick porridge at approximately between 148 and 156 degrees F. Then this is allowed to sit for between one and three hours. During this time, enzymes in the grain convert the starch into sugars. Finally, the liquid would be drained away from the grain solids.

### Using an insulated vessel for the mash

Digbie writes, in "Scotch Ale from my Lady Holmbey":

*Heat Spring-water; it must not boil, but be ready to boil, which you will know by leaping up in bubbles. Then pour it to the Malt; but by little and little, stirring them strongly together all the while they are mingling. When all the water is in, it must be so proportioned that it be very thick. Then cover the vessel well with a thick Mat made on purpose with a hole for the stick, and that with Coverlets and Blankets to keep in all the heat. After three or four hours, let it run out by the stick (putting new heated water upon the Malt, if you please, for small Ale or Beer) into a Hogshead with the head out. ...*

I use a 10-gallon Rubbermaid-brand water cooler, with an Easymasher(tm) screen-manifold (a 6-inch tube of stainless-steel screen, closed on one end and attached to a tube on the other) installed inside.

### Sparging



Sparging is the technique of adding additional hot water to a draining bed of grain in order to rinse more sugar out the grain. Period and post-period evidence implies that the English didn't do this, but instead used a double- or triple-infusion technique, where the liquor of first running would be drained off, and then more hot water would be added and the grain "re-mashed". After having used this multiple-mashing technique, I can attest that the first runnings come out very, very strong, and the second runnings come out in about the strength and character as in this batch.

## Cooling

Digbie describes slow-cooling (in a large vat, for some 40 hours). Markham describes a quicker cooling technique involving pouring the hot wort into a shallow open vat. Neither of these are quite suitable for making a quick batch while avoiding inoculation with who-knows-what [De Keersmaecker]. So we used an immersion-type cooler.

## Fermenting

After the wort is cool, a modern brewer would pitch in the yeast, make sure the wort is well aerated, and put on a blow-off tube or fermentation lock. Digbie and Markham suggest some sort of blow-off technique. When we made this batch, we fermented in a glass carboy. I forgot to bring over my big blow-off tube, so we just left some extra space in the top and used a fermentation lock.

## More information

Some of the above text was taken from Tofi's Elizabethan Homebrewing class at Pennsic XXV, which contains a more thorough treatment of some of the issues of brewing later-period English style beers and ales authentically.

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